FAA Facts

Federal Aviation Administration
2005

HOW DOES THAT WORK?

SMALL AIRCRAFT CERTIFICATION AND CONTINUED OPERATIONAL SAFETY

The FAA evaluates the design and manufacture of small aircraft before issuing airworthiness approvals to operate in the United States airspace. The manufacturer must demonstrate to the FAA that both the aircraft design and their manufacturing facility comply with the applicable Federal Aviation Regulations (FARs). The complete certification cycle for standard category aircraft includes:

- Design Approval (Type Certification)
- Production Approval (Production Certification)
- Airworthiness Approval (Airworthiness Certification)
- Continued Operational Safety

Type Certification (Design Approval)

Many different types of Small Aircraft may be type certificated. These include normal, utility, acrobatic, and commuter category airplanes; manned free balloons; airships (blimps); sailplanes (gliders), agricultural (cropdusters), and other special classes of aircraft. The substantiating data is called type design data and includes drawings and specifications, manufacturing processes, airworthiness limitations, operating limitations, the type certificate data sheet, instructions for continued airworthiness, plus any other characteristics prescribed for the airworthiness, noise, or emissions of the product.

The aircraft manufacturer (applicant) initially submits an application for a type certificate to the appropriate FAA Aircraft Certification Office (ACO). The FAA expects a complete certification plan that includes a detailed schedule, compliance plan, use of designees, as well as aircraft specific data. The FAA ACO will review and discuss said data and agree upon a schedule with the manufacturer. The FAA ACO then assigns a Project Manager and establishes project teams for all aspects that require significant involvement by technical personnel. The FAA project team normally consists of the applicant's project managers, an FAA project manager, engineers and technical experts, pilots and flight test engineers, and FAA inspectors.

Extensive communication occurs throughout the project to ensure that any technical issues are raised and resolved. In addition, the FAA and the applicant hold

formal Type Certification Board meetings to monitor progress of the type certification program.

The FAA typically conducts flight tests, witnesses component tests, reviews technical reports, and performs airworthiness inspections to validate the applicant's compliance to the certification requirements. When the applicant has successfully demonstrated compliance with the applicable FAR's, the ACO will issue a type certificate.

Production Approval

Authorization to produce a type certificated aircraft in the United States is normally issued in the form of a Production Certificate (PC). A PC allows a manufacturer to build duplicate models of type certificated products that must conform to the FAA type design and be in condition for safe operation.

A Production Limitation Record (PLR) is issued as part of each (PC). The (PLR) lists all of the models of aircraft that a holder of a (PC) can build under the authority of the (PC).

Production Certificates are effective until they are surrendered, suspended, revoked, or the FAA otherwise establishes a termination date.

Airworthiness Approval

The criteria for the issuance of a standard airworthiness certificate are that the aircraft conforms to its type design and is in condition for safe operation. New aircraft manufactured under a production certificate are entitled to a standard airworthiness certificate without additional inspection or testing. However, the FAA may inspect any aircraft to determine conformity to the type design and aircraft condition.

Continued Operational Safety

The FAA continues to oversee aircraft after they have been approved, manufactured and sold to the public. When the aircraft enters service, the FAA monitors how the aircraft performs during its life cycle. The FAA has established a proactive and predictive safety management program to evaluate and prioritize operational safety concerns and then develop and implement corrective action.

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